

Verizon points out that it is the largest provider of DSL service in Massachusetts, adding four times as many DSL lines as all other CLECs combined.⁴⁰ This is despite Verizon's late start in the DSL market. SBC has recently reported 516,000 DSL customers at the end of the third quarter, and has stated that it is adding 4,000 new customers a day.⁴¹ While some CLECs may have gotten a jump-start in the advanced services race, this lead has quickly diminished, and the ILECs are poised to grab the lion's share of the advanced services market.

It is with this backdrop of rapid ILEC deployment of advanced services that the ILECs advocate the establishment of restrictive rules governing what equipment may be collocated at remote terminals. The ILECs also ask that the Commission refrain from requiring them to unbundle new electronics that enhance the functionality of loops, and to permit ILECs to retire copper facilities that could enable CLECs to provide some advanced services notwithstanding ILEC efforts to prevent meaningful access to fiber. For each of the new technologies (line cards, OCDs, DWDM and CBR QoS), or for equipment that facilitates these new technologies, ILECs argue that CLECs should not be allowed to collocate equipment to facilitate their use of these technologies, nor should CLECs have access to these electronics on an unbundled basis. In short some ILECs are striving to create a new bottleneck in the provisioning of telecommunications

Arbitration Decision at p. 11 (August 17, 2000) ("*Illinois Line Sharing Order*").

⁴⁰ *In the Matter of Application by Verizon New England, Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), and Verizon Global Networks, Inc. for Authorization to Provide In-Region, InterLATA Services in Massachusetts*, CC Docket No. 00-176, Evaluation of the United States Department of Justice at p. 7 (October 27, 2000).

⁴¹ *Communications Daily, Telephony* at p. 7 (October 24, 2000).

services – a bottleneck in next generation networks.

Mpower urges the Commission to evaluate issues in this proceeding in light of ILEC efforts to extend their monopoly to next generation network architectures. Nothing could be more inimical to the goals of the Telecommunications Act of 1996 than such a result. In this connection, the claim of some ILECs such as SBC that the availability of cable, wireless, and satellite services obviates any need for regulatory oversight over ILECs is patently absurd.⁴² Apart from the fact that it is far from clear that cable operators will ever be subject to any degree of regulation as common carriers, SBC's position simply ignores its statutory obligation to unbundle, and provide access to, its networks in ways that support competition. The Commission should also reject ILEC statements that increased regulation may dampen their ardor for deploying new technologies.⁴³ In fact, it is the threat of competition, not protection from it, that has spurred ILECs into providing advanced services to consumers. Accordingly, the Commission should deny ILECs' requests that the Commission refrain in this proceeding from taking any steps to promote competition in connection with their deployment of next generation network architectures.

B. ILECs Ignore Current Unbundling Obligations

The ILECs argue that the Commission needs to apply the "necessary" and "impair" test to determine if NGDLC equipment should be unbundled. The ILECs conveniently fail to

⁴² *SBC Comments* at p. 2.

⁴³ *SBC Comments* at p. 4; *Verizon Comments* at p. 33. The commitments mandated by the Commission do not seem to have slowed down SBC's deployment of Project Pronto. *Id.*

remember that this Commission has already ordered the unbundling of DLC-equipped loops. The Commission was prescient in its determination in its *Local Competition Order*:

[We] further conclude that incumbent LECs must provide competitors with access to unbundled loops regardless of whether the incumbent LEC uses integrated digital loop carrier technology, or similar remote concentration devices, for the particular loop sought by the competitor. IDLC [Integrated Digital Line Carrier] technology allows a carrier to aggregate and multiplex traffic directly into the switch without first demultiplexing the individual loops. If we do not require incumbent LECs to unbundled IDLC-delivered loops, end users served by such technologies would not have the same choice of competing providers as end users served by other loop types. Further, such an exception would encourage incumbent LECs to “hide” loops from competitors through use of IDLC technology.⁴⁴

While the Commission referred to IDLC technology, in the intervening years it has evolved into the next generation DLC technology. The Commission in its *UNE Remand Order* restated its finding as to unbundling IDLC loops, but noted at the time that CLECs were not yet able to separate and access IDLC customers’ traffic on the wire-center side of the IDLC multiplexing devices in an economical manner.⁴⁵ The NGDLC technology, however, has made such access technically and economically feasible. The Commission has not retreated from its holding that the DLC-served loops should be unbundled, and the same rationale for unbundling

⁴⁴ *In the Matter of the Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, FCC 96-325, First Report and Order, 11 FCC Rcd. at 15499 at ¶ 383 (1996) (“*UNE Remand Order*”).

⁴⁵ *In the Matter of the Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, FCC 99-238, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, at ¶ 217, fn. 418 (1996) (“*Local Competition Order*”).

described above still applies regardless of the technological developments.⁴⁶ There the Commission clearly contemplated that the DLC technology constituted part of the unbundled loop, and that failing to require unbundled access to such loops would limit the choice of providers for end users served by the technology.⁴⁷

Unfortunately, ILEC representations in the initial round of comments reveal that they are ignoring the existing requirement that they provide meaningful access to loops provisioned over DLC systems, in this case NGDLC systems, and therefore continue to raise a host of spurious excuses for not doing so. Some ILECs and manufacturers argue that it is not feasible for CLECs to collocate at NGDLC remote terminals, not just for space availability issues, but also because access to the remote terminal “would require that the incumbent open its splicing arrangement to connect the competitor’s facilities to the incumbent’s copper loop.”⁴⁸ This arrangement is necessary “because the incumbent’s derived (copper) feeder must be hard-wired to the protector frame at the remote terminal.”⁴⁹ Thus, the ILECs argue that the point of collocation for CLECs

⁴⁶ NGDLCs is simply IDLC technology that conforms to Telcordia’s GR-303 specifications. These systems reduce operating and capital equipment costs while delivering a full range of telecommunications services. The NGDLC is an Integrated Access System that supports multiple distribution technologies and architectures (*e.g.*, xDSL, Fiber-to-the-Curb) and a wide range of services (narrowband and broadband) on a single access platform. <<<http://www.telcordia.com/resources/genericreq/gr303/index.html>>>

⁴⁷ Market forecasts project that over half the U.S. telephone subscribers will be served by remote terminals within the next three years. *Catena Comments* at p. 3.

⁴⁸ *Verizon Comments* at p. 24.

⁴⁹ *Id.* Verizon does admit that SBC has “voluntarily” proposed to “hardwire” competitors’ equipment to its remote cabinets using an “engineering controlling splice.” *Id.* at p. 25.

on NGDLC loops should be the Feeder Distribution Interface (“FDI”). This is particularly troublesome for CLECs because it will render their ability to “provide service to” customers served by the NGDLC facilities cost-prohibitive. First, collocation at remote terminals is already costly in that the number of customers served by a particular remote terminal may not justify the cost of collocating a DSLAM. Collocating at the FDI drives the costs of collocation up even more, as one remote terminal typically services two to four FDIs.⁵⁰ CLECs will, therefore, be forced to collocate at more sites. Second, even Alcatel admits shortcomings of FDIs as collocation sites given the lack of nearby power and fiber facilities, and that they were not designed for electronic equipment additions, such as DSLAMs.⁵¹ Alcatel’s proffered solution, that CLECs construct separate enclosures and extend copper feeder from these enclosures to the FDI,⁵² will only drive up the CLEC costs even more. If CLECs do not have unbundled access to the NGDLC facilities, it will be truly cost-prohibitive for CLECs to serve NGDLC-served customers. Therefore, these customers will have a *de facto* choice of only one provider, which is the very reason why this Commission saw the need to unbundle IDLC facilities in the first place. Mpower urges the Commission to avoid this outcome.

In short, the Commission does not need to expand the definition of the loop to include such equipment; the equipment has already been considered part of the loop. Accordingly, in addition to establishing new UNEs, the Commission should reject ILEC attempts to evade the

⁵⁰ *Alcatel Comments* at p. 8.

⁵¹ *Id.* at p. 26.

⁵² *Id.*

current rules and direct them to provide unbundled access to IDLC systems, including NGDLC systems, as already required under existing rules.

C. Voluntary Offerings Are Insufficient

In its original iterations of its Broadband Service Offering, SBC stated it would offer unbundled access to the Project Pronto infrastructure, but a few months later it performed an about-face and decided to offer it as a voluntary wholesale offering -- in effect only for resale.⁵³ This underscores the importance of having the Commission reaffirm its requirement that ILECs provide access to DLC loops on an unbundled basis. The uncertainty caused by reliance on “voluntary” product offerings is seen in the differences between the revised contract language for the Broadband Service Offering proffered by SBC⁵⁴ and the prior representations made by SBC before this Commission in its proceeding evaluating SBC’s ownership of equipment in its NGDLC deployment. For instance, SBC stated it would not be offering the Broadband Service “in the context of an Interconnection Agreement negotiated under Sections 251/252(c)(2),”⁵⁵ but rather as a stand-alone Service Agreement. This Commission, however, contemplated that the offering would be pursuant to a proposed amendment to an interconnection agreement.⁵⁶ The

⁵³ *In the Matter of Application of Ameritech Michigan for approval of cost studies and resolution of disputed issues related to certain UNE offerings*, Michigan Public Service Commission Case No. U-12540, Cross-Examination Testimony of John P. Lube of Ameritech Michigan at pp. 589-592 (MI PSC Oct. 24, 2000).

⁵⁴ CC Docket No. 98-141, letter from SBC (September 6, 2000) (“*SBC September 6th Letter*”).

⁵⁵ *SBC September 6th Letter* at p. 1.

⁵⁶ *In the Matter of Ameritech Corp., Transferor, and SBC Communications, Inc.*,

(con’t.)

Commission was under the expectation that state proceedings relating to the proposed amendment would resolve particular issues in regard to the product offering. Second, the September 6th letter offering only provides access to UBR Quality of Service (“QoS”), while the Commission expected SBC to offer CBR QoS.⁵⁷ The September 6th letter also reserved to SBC the sole right to determine practical or technical feasibility of a particular feature or functionality of equipment, while the Commission established a presumption that “all features, functions, and capabilities made available by the manufacturer are technically and operationally feasible” unless SBC can demonstrate that it is not.⁵⁸ Obviously, the commitments of the ILECs are often subject to unilateral change or withdrawal.

For these reasons, the Commission must be explicit about ILEC obligations in regard to the NGDLC architecture. CLECs should not be made to rely on “voluntary” product offerings for access to NGDLC loops when these loops should already be provided on an unbundled basis, and when these “voluntary” offerings can be modified or withdrawn at any time. Mpower stresses that it will be far more difficult for CLECs to successfully attract business capital, especially in the current investment climate, or to implement business plans where the

Transferee, for Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission’s Rules, CC Docket No. 98-141, ASD File No. 99-49, Second Memorandum Opinion and Order, FCC 00-336, at ¶ 30 (Sept. 8, 2000) (“*Project Pronto Order*”). (“SBC explaining that its incumbent LECs will offer all carriers (including SBC’s advanced services affiliate) an amendment to their interconnection agreements filed with the state commissions to provide access to the broadband offering.”) *Id.* at ¶ 30.

⁵⁷ SBC Proposed Interim Agreement at p. 14; *Project Pronto Order* at ¶ 45.

⁵⁸ SBC Proposed Interim Agreement at p. 16; *Project Pronto Order* at ¶ 44.

underlying facilities are only provided on the basis of voluntary commitments. Mpower has previously pointed out that the Commission has recognized that a ten-year expectation for the availability of facilities is necessary to permit investment in communications facilities.⁵⁹

D. CLECs Should Not Be Limited to the Same Services that ILECs Offer

SBC's NGDLC loops as currently configured apparently only support ADSL service and will not support proprietary SDSL service.⁶⁰ This limitation is not fueled by technical realities as much as it is by proprietary concerns and/or anticompetitive objectives. The main objection of Alcatel to the provisioning of line cards supporting other types of service is that such deployment will interfere with proprietary features of Alcatel's system.⁶¹ Alcatel describes its NGDLCs as an integrated system that provides a wide range of services, and a system that includes internal proprietary components and software that preclude CLEC access to the particular internal components.⁶² Alcatel argues that third-party access is limited to the derived services of these systems through standard service interfaces.⁶³ Likewise, SBC and Verizon argue that for purposes of collocation, the Commission must focus on complete units of equipment, and that

⁵⁹ See Letter from Mpower to Carol Matthey, Deputy Chief, Common Carrier Bureau, (August 15, 2000). As noted therein, for many years the Commission has had a policy of encouraging investment in radio spectrum by issuing licenses with a high expectation of renewal together with a ten year notice to vacate that medium when needed for other purposes. See e.g. *Amendment of Section 2.106 of the Commission's Rules for Use by the Mobile-Satellite Service*, ET Docket No. 95-18, FCC 00-233, released July 3, 2000.

⁶⁰ *Alcatel Comments* at p. 21.

⁶¹ *Id.* at p. 3.

⁶² *Alcatel Comments* at pp. 2, 10.

⁶³ *Alcatel Comments* at p. 3, 25.

line cards are merely “sub-components” of the NGDLC.⁶⁴

Alcatel admits that there are DSLAMs that support other proprietary xDSL services and features, but asserts that it is “commercially unattractive to develop the same capabilities in NGDLC systems.”⁶⁵ This statement is absurd on its face given that CLECs have been clamoring for meaningful access to the Project Pronto network architecture in ways that will permit them to provide services beyond the limited services that SBC plans to provide.

CLECs do not begrudge equipment manufacturers the right to protect their proprietary interests and to increase their financial bottom lines. A problem arises, however, when manufacturers are only catering to the interests of their major clients, the ILECs, and not implementing other technically feasible capabilities of their equipment.⁶⁶ Clearly SBC wants to focus on providing ADSL service, and Alcatel is catering to that interest, precluding the provisioning of other services. However, it is worth noting the ILECs had access to DSL technologies for years without ever attempting to make service available to consumers. It was not until competitive providers entered the market and began providing these services that the ILECs began offering this service. This is but one illustration of how permitting ILECs to dictate the services provided over their network can delay the roll-out of new services to

⁶⁴ *SBC Comments* at p. 16; *Verizon Comments* at p. 8.

⁶⁵ *Id.* at pp. 9-10.

⁶⁶ For instance, the record of the Project Pronto proceeding is replete with situations where functionality or capabilities of equipment which were initially deemed technically infeasible by SBC and/or Alcatel suddenly became technically feasible when SBC recognized that “voluntary” commitments would need to be made.

consumers.

Furthermore, the Commission must not permit new advanced services facilities to continue or extend the current ILEC monopoly on essential network facilities through ILEC alliances with equipment suppliers or any by other means. The real losers will be the end users who will not get access to a full array of services, but will obtain only the subset of services the ILECs provide. It is worth noting that the If CLECs are limited to the types of services the ILEC determines the NGDLC should support, then the CLECs become mere resellers of ILEC service. As Cisco notes, “as incumbents introduce innovative service offerings, competitive LECs must be allowed to respond by upgrading their own capabilities and offering new or additional services through which to differentiate themselves from the incumbents.”⁶⁷

Alcatel implicitly recognizes this reality when it notes that it had previously relied on direct input from its customers for near-term development plans, but now “with the advent of shared use of equipment” it invites CLECs to provide input on features and functions they would like to see developed in Alcatel’s systems.⁶⁸ This is a good first step, but it is not, and cannot be, enough. Alcatel admits that its development plans are fueled by the “prevailing regulatory landscape” and potential demand. If its main customers are the ILECs, and there is no regulatory directive to promote interoperability of equipment, then Alcatel will continue its development efforts solely for the benefit of the artificially limited market needs created by the ILECs, at the

⁶⁷ *Cisco Comments* at p. 5.

⁶⁸ *Alcatel Comments* at p. 23.

expense of ILECs' competitors.

Mpower submits that the Commission needs to do more than rely on the bald assurances of Alcatel that it will respond to demand for new products and features. As stated, there is a great deal of demand from CLECs to provide a wide range of services over appropriate next generation unbundled network elements. For all the reasons stated by Mpower in this proceeding, it is now time for the Commission to establish additional UNEs and to permit CLECs to install their own lines cards and next generation network components. As discussed below, it is also now time for the Commission to establish appropriate open interfaces and standards that will assure a competitive market for next generation network components.

E. The Commission Should Require Appropriate Open Standards for Next Generation Network Components

The Commission has stated:

We are committed to ensuring consumers have access to a broad array of services and technologies. In the *SBC/Ameritech Merger Order*, we noted that SBC's incumbent LECs have an incentive to stifle innovation by locking their competitors into their choice of technology. We concluded that this incentive, if left unchecked, would most likely grow after the merger and ultimately harm consumers.⁶⁹

For this reason, the Commission required SBC to make "available all features, functions, and capabilities of the equipment installed in remote terminals at just, reasonable and non-discriminatory rates, terms, and conditions."⁷⁰ Of course, this requirement should apply across

⁶⁹ *Project Pronto Order* at ¶ 41.

⁷⁰ *Id.* at ¶ 42.

the board to all ILECs in their deployment of NGDLC equipment. A CLEC should be allowed to request a particular capability of the equipment, and the ILEC should have the burden of demonstrating why this would not be feasible. Such a requirement comports with the definition of a network element under the Act as a “facility or equipment used in the provision of a telecommunication service” which includes the “features, functions, and capabilities that are provided by means of such facility.”⁷¹

Providing CLECs access to NGDLC loops on an unbundled basis also requires that CLECs have access to the full capabilities and functionality of the loops.⁷² CLECs are not going to gain such access without open network standards that permit them to purchase next generation network components, including line cards, in a fully competitive equipment market, as well as install and collocate them. In its initial comments, Mpower addressed the need for CLECs to collocate line cards in the NGDLC.⁷³ It appears that the main obstacle to such collocation and/or unbundled access for line cards and next generation network components generally is not technical, but is instead based upon ILEC desires to use equipment that limits the opportunities of competitors. Some manufacturers are also pleased to limit the capabilities of their equipment or choose to establish and define equipment interfaces in ways that limit, rather than expand,

⁷¹ 47 U.S.C. § 153(29).

⁷² The Commission has imposed requirements on ILECs before to ensure access to the full functions and capabilities of the loop. For instance, “in order to secure access to the loop’s full functions and capabilities, we require incumbent LEC’s to condition loops.” *UNE Remand Order* at ¶ 167. This affirmative obligation was placed on ILECs to ensure that CLECs could provide a full array of services, particularly advanced services.

⁷³ *Mpower Comments* at p. 34.

competition and CLEC options.

Mpower submits that the Commission should take steps to require that ILECs deploy equipment with defined interfaces that maximize CLECs' opportunities to purchase from a wide variety of vendors and install next generation network components including line cards. Mpower believes that this will ultimately provide the widest possible market for manufacturers. At the same time, any manufacturer's proprietary information can be protected through appropriate nondisclosure agreements. Further, open standards for next generation network components will protect ILECs from "stranded technologies." For example, as pointed out by Mpower in this proceeding, SBC unilaterally deployed an unsuccessful so-called advanced network in Richardson, Texas, portions of which are no longer capable of supporting the services initially intended. If this had been developed on an open standards basis, SBC would have been assured that CLECs interconnect with it on a UNE basis and SBC would not now be faced with very expensive "stranded technology" in Richardson, Texas. Accordingly, the Commission should require ILECs to deploy next generation network components with appropriate open standards.

F. The Commission Should Define Loop and Transport UNEs to Include Advanced Services Electronics

SBC argues that before the Commission adds any electronics to the definition of the loop, the Commission must make a finding that each electronic component satisfy the necessary/impair test of section 251(d)(2).⁷⁴ This approach is totally inconsistent with the approach the Commission has taken to electronics in the past. The Commission has rightly

⁷⁴ *SBC Comments* at p. 58.

recognized that the electronics are not, in and of themselves, network elements, but rather part of other network elements. The Commission has included the attached electronics in the definition of the loop network element.⁷⁵ The one piece of attached electronics it excluded from the definition of the loop, the DSLAM, the Commission found to be the component of another network element, the packet switching network element.⁷⁶ Thus, the question is whether the new electronics, *i.e.*, line cards and OCDs, are properly considered to be component parts of other network elements. The unequivocal answer is “yes.” This is consistent with the approach SBC takes for such equipment. For instance, SBC notes that the line card is a mere “sub-component” of the NGDLC and has no stand-alone functions.⁷⁷

The Commission should not refrain from imposing any obligations on ILECs in regard to this equipment because of the specter of competition from other technologies such as cable. Rather the only relevant consideration is whether these electronics are part of the loop network element. The loop was initially defined by the Commission as “a transmission facility between a distribution frame, or its equivalent, in an incumbent LEC central office, and the network interface device at the customer premises.”⁷⁸ In its *UNE Remand Order*, the Commission modified its definition of the loop network element to include “all features, functions and

⁷⁵ *UNE Remand Order* at ¶ 167.

⁷⁶ *UNE Remand Order* at ¶ 175.

⁷⁷ *SBC Comments* at p. 16.

⁷⁸ *In the Matter of the Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, FCC 96-325, First Report and Order, 11 FCC Rcd. at 15499 at ¶ 380 (1996)(“*Local Competition Order*”).

capabilities of the transmission facilities, including dark fiber and attached electronics (except those used for the provision of advanced services, such as DSLAMs) owned by the incumbent LEC, between an incumbent LEC's central office and the loop demarcation at the customer premises."⁷⁹ The Commission has sought to ensure that its definition of the loop will apply to "new as well as current technologies."⁸⁰ Thus, the question is whether line cards and OCDs are properly considered to be features, functions and capabilities of the loop transmission facility. The unequivocal answer for all the attached electronics is "yes."

1. Line Cards

Perhaps the strongest support for including line cards within the definition of the loop comes from Verizon. Verizon notes:

Verizon could use several kinds electronics in the loop that are unrelated to any particular service but which cannot technically be unbundled from the transport facilities. These include Digital Loop Carrier, Next Generation Digital Loop Carrier, High Bit-Rate Subscriber Line, Digital Single Subscriber Line, Optical Network Units, and Fiber-to-the-Home electronics. Each of these technologies provides no service itself. Instead, each technology simply provides a transmission channel to facilitate delivery of specific services to the end user.⁸¹

Thus, the NGDLC is a component part of the loop transmission facility in that it provides a particular transmission channel. Under Verizon's description, the NGDLC has no independent

⁷⁹ *In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, FCC 99-238, ¶ 167 (1999)(*"UNE Remand Order"*).

⁸⁰ *Id.*

function, but rather is used to facilitate the transmission functionality of the loop. Verizon goes on to add that the same holds true for electronic devices that are not used to provide any particular service, but are used “along with the associated network facilities to provide transmission capacity.”⁸² This formulation is also consistent with SBC and Alcatel’s characterizations of line cards. SBC argued that line cards have no stand-alone function and are merely a “sub-component” of the NGDLC, and Alcatel has described the line cards as integral components of the NGDLC.⁸³

This characterization of line cards supports the inclusion of the line cards within the loop network element. The situation is analogous to the circumstances that led the Texas Public Utility Commission to include splitter functionality in the definition of a loop.⁸⁴ In that instance, the Arbitration Order noted:

The Arbitrators recognize that the FCC specifically rejected DSLAMs as part of the “attached electronics” of the loop because of its determination that DSLAMs are used solely to provide advanced services. Accordingly, the Arbitrators believe it would be inaccurate from a technical standpoint to analogize splitters to DSLAMs. As noted above, a splitter is a passive device necessary

⁸¹ *Verizon Comments* at p. 35.

⁸² *Id.*

⁸³ *SBC Comments* at p. 16; *Alcatel Comments* at p. 18.

⁸⁴ *Petition of Southwestern Bell Telephone Company for Arbitration with AT&T Communications of Texas, L.P., TCG Dallas, Teleport Communications, Inc. Pursuant to Section 252(B)(1) of the Federal Communications Act of 1996*, Public Utility Commission of Texas Docket No. 22315, Arbitration Award at p. 17 (September 13, 2000) (“*Texas Line Sharing Arbitration*”).

to access both the voice and data portions of the loop in order to provide an end user with both voice and xDSL service. By contrast a DSLAM is used primarily for the routing and packetizing of data. The Arbitrators note that adding a splitter to the UNE-loop is no different than adding a circuit-enhancing device to the loop at the central office.⁸⁵

Line cards are clearly devices that support and enhance the functionality of the loop network element. Line cards provide splitter functionality and DSLAM functionality, and support both voice and DSL service. Catena observes that the most cost-effective remote terminal deployment solution is the use of integrated POTS/DSL line cards.⁸⁶ SBC attempts to argue against providing unbundled access to the line cards by attempting to downplay the line cards' importance in providing voice service.⁸⁷ This is ironic considering that when SBC was seeking to exclude line cards from the definition of advanced services equipment so it could maintain ownership of the line cards, SBC trumpeted the voice functionality provided by the line cards.⁸⁸ By SBC's own definition, the combination unit equipment is "an integrated piece of technology having both POTS and DSLAM capabilities as well as the 'splitter' functionality."⁸⁹ Line cards, unlike DSLAMs, are not used solely for the provision of advanced services, but are

⁸⁵ *Id.*

⁸⁶ CC Docket Nos. 98-147 and 96-98, Comments of Catena Networks, Inc. at p. 8 (October 12, 2000) ("*Catena Comments*").

⁸⁷ *SBC Comments* at p. 50.

⁸⁸ CC Docket No. 98-141, Letter from Paul K. Mancini, SBC Vice President and Assistant General Counsel to Lawrence Strickling, Common Carrier Bureau at p. 4 (February 15, 2000) ("*SBC February 15th Letter*").

⁸⁹ *Id.*

“deployed where there are multiple service requirements (*i.e.*, voice and data).”⁹⁰ Clearly SBC’s original pronouncements on line cards are evidence of how CLECs would be “impaired” in the provision of voice service without access to this equipment on an unbundled basis.

2. OCDs

In its initial comments, Mpower described how OCDs, which are essentially ATM switches, separate each CLEC’s ATM packetized bit stream from the common ATM packetized bit stream coming from the remote terminals, and hand off the appropriate packetized bit stream to each CLEC and ILEC advanced services affiliate.⁹¹ Under SBC’s proposed network configuration in Project Pronto, the ATM switches are “the only means by which the ADSL-based traffic of multiple CLECs can be aggregated and disaggregated.”⁹² Despite the obvious importance of the OCDs for exchange of traffic from the ILEC to the CLEC, SBC argues that the OCDs are “not strictly necessary for interconnection or access to unbundled network elements.”⁹³

⁹⁰ See also CC Docket 98-141, Comments of Alcatel USA at p. 2 (March 2, 2000)(*Alcatel Comments*) SBC argues that the cards are not advanced services equipment, and notes the majority of the cards will be used to provide POTS service, at least initially. *SBC February 15th Letter* at p. 4; see also, *SBC Reply Comments* at p. 7.

⁹¹ CC Docket 98-141, *Ex Parte* Letter from DSL Access Telecommunications Alliance to Carol Matthey at p. 4 (April 11, 2000) (“*DATA Letter*”).

⁹² *Id.* The placement of the OCDs in the central office is an indication of SBC’s failure to consider more economical alternatives, such as allowing CLECs to access the bit stream at the DLC, which would preclude the need for a central-office based ATM switch, including the need for a multiport DLC at the CO, and allow for the deployment of fewer ATM switches. *Id.* The failure to implement a cost-effective architecture will surely lead to higher proposed cost-recovery from SBC for use of this functionality. *Id.* It will also drive up the costs of collocating the OCDs.

⁹³ *SBC Comments* at p. 15.

This position is ludicrous given the fact that the OCDs represent the only way for CLECs to access their data traffic in the Project Pronto architecture.

SBC's position demonstrates the need to ensure that CLECs have access to the OCDs on an unbundled basis. If CLECs are not able to collocate OCDs, which may be a cost-prohibitive proposition based on the way ILECs configure their network, then CLECs need to have unbundled access to this vital equipment. The Commission should either define the OCD to be part of the loop network element, as advocated in our initial comments, or treat the OCD as a component of the packet switching network element and unbundle the packet switching network element.

The Commission noted in its *UNE Remand Order* that:

When an incumbent has deployed DLC systems, requesting carriers must install DSLAMs at the remote terminal instead of at the central office in order to provide advanced services. We agree that, if a requesting carrier is unable to install its DSLAM at the remote terminal or obtain spare copper loops necessary to offer the same level of quality for advanced services, the incumbent LEC can effectively deny competitors entry into the packet switching market. We find that in this limited situation, requesting carriers are impaired without access to unbundled packet switching. Accordingly, incumbent LECs must provide requesting carriers with access to unbundled packet switching in situations in which the incumbent has placed its DSLAM in a remote terminal.⁹⁴

In this proceeding, the ILECs have taken the position that there is no space at most remote terminals for CLECs to collocate their DSLAMs, and that even if there is space at the remote terminal, such collocation is not technically feasible given hardwiring. The ILECs have

⁹⁴ *UNE Remand Order* at ¶ 313.

further argued that CLECs may not collocate their own line cards with DSLAM functionality. The OCD could be considered to be part of this network element since it is essentially an ATM switch. Without unbundled access to the OCDs, CLECs would be unable to access data traffic of customers served by such loops, and would be effectively precluded from offering xDSL service to such customers if spare copper facilities are not available. Thus, the Commission should require that packet switching be offered on an unbundled basis where NGDLC facilities are deployed.

G. The Commission Should Designate New Fiber-Based UNEs *Now*

1. Introduction

As part of its initial comments, Mpower provided a white paper that presents an analytical framework for identification of new UNEs in next generation network architectures.⁹⁵ Through application of this framework, Mpower identified, and the Commission should now establish seven new fiber-based UNEs. The Commission must make certain that *all* equipment in the network is open to competition because bringing this equipment to market requires significant planning and investment. The Commission should adopt rules that actively encourage manufacturers to make these requisite investments. Mpower does not believe that creating the proper environment for the development of new advanced service equipment should be controversial, because both ILECs and CLECs will benefit. This is especially true given the fact that ILECs are now pursuing the implementation of these technologies.

⁹⁵ *MPower Comments at Attachment B.*

In this section of these reply comments, Mpower addresses those comments that addressed two of the potential UNEs identified by Mpower – the fiber wavelength UNE and the ATM over Fiber UNE. Mpower urges the Commission to establish the seven fiber-based UNEs it identified in its comments but does not discuss these further at this time because other initial commenters have not commented in the record concerning them.

2. Fiber WaveLength UNE

Despite some ILEC protestations to the contrary, the time is ripe for the Commission to address DWDM technology. SBC notes that it will be commencing a trial of DWDM for interoffice transport next year.⁹⁶ Verizon also has plans to deploy DWDM for inter-office fiber links.⁹⁷ Some ILECs, of course, argue that it is premature for the Commission to consider this technology.⁹⁸ Thus, the ILECs expect this Commission and CLECs to sit idly by while ILECs deploy what could be a key technology. Then, later, ILECs will raise various objections as to why DWDM should not be offered as a UNE and/or seek to restrict its availability. If there is a lesson to be learned from the line sharing experience, it is that the Commission should not wait to establish this new technology as a UNE. With line sharing, ILECs leveraged their control over the loop facility to get a head start in providing voice and xDSL service over a single loop. CLECs to this day are litigating in states throughout the U.S. over such issues as line splitting, line sharing over fiber loops, and OSS upgrades to support line sharing. Meanwhile, Verizon has

⁹⁶ *SBC Comments* at p. 58.

⁹⁷ *Verizon Comments* at p. 35.

⁹⁸ *SBC Comments* at p. 58.

been provisioning Infospeed, its retail line sharing service, for more than a year and has provisioned many thousands of shared lines.⁹⁹

DWDM is clearly a technology has many potential use by ILECs and CLECs alike. The technology can increase the capacity of fiber and, since deployment of fiber is a more capital-intensive undertaking than deployment of copper facilities, DWDM can promote the more efficient use of existing network facilities. Clearly the ILECs would not have plans to deploy this expensive technology if they did not see tremendous potential in its use. As noted in Mpower's initial comments, DWDM gives a carrier growing capacity and intelligent provisioning of bandwidth, and is perhaps the best long-term strategy for promoting network capacity.¹⁰⁰ Intelligent provisioning of bandwidth will be crucial to the deployment of new services, and will hopefully eliminate some of the impediments to providing new services caused by bandwidth concerns.

3. ATM over Fiber UNE

Despite making a commitment to provide Constant Bit Rate (CBR) Quality of Service that will enable CLECs to offer carrier-grade voice over DSL and other bandwidth-intensive applications,¹⁰¹ SBC spends nearly five pages arguing why the Commission should not allow

⁹⁹ *Investigation as to Propriety of the Rates and Charges set forth in M.D.T.E. No. 17, etc.*, D.T.E. 98-57-Phase III, at p. 46 (Mass. D.T.E. September 29, 2000) ("Massachusetts Line Sharing Order").

¹⁰⁰ *MPower Comments* at p. 51 (citing Vincent Ryan, *Life on the Edge*, Telephony, May 15, 2000).

¹⁰¹ *Project Pronto Order* at ¶ 45.

CLECs to have unrestricted access to all transmission speeds and QoS classes, particularly CBR and VBR (variable bit rate).¹⁰² SBC argues that if the Commission does require CLEC access to CBR and VBR, that SBC should be allowed to price the offering according to the service level guaranteed and not the actual traffic level generated.¹⁰³ In contract, Qwest makes no such pricing arguments and would simply limit access based upon network capacity.¹⁰⁴

As noted in Mpower's initial comments, new technological developments are eliminating the service degradation issues in regard to CBR QoS. The comments of manufacturers in this proceeding support this proposition. For instance, Cisco notes that its new DSLAMs include:

“smart” technology that enables the equipment to ensure performance quality of service (“QoS”) for new and emerging broadband applications that necessitate very low delay, very low delay variance, and/or very low loss of data. For example such QoS functionalities can allocate bandwidth and thereby prioritize real-time applications (such as voice services) and enable carriers to offer customers service level agreements that guarantee specific bandwidth levels.¹⁰⁵

Cisco notes the importance to carriers of being able to differentiate their service offerings and observes that there is a demand for bandwidth-intensive, real-time applications such as videoconferencing or voice over IP. QoS guarantees a certain level of performance

¹⁰² *SBC Comments* at pp. 65-70. It is interesting how SBC seems to be diluting its “commitments” in regard to its Project Pronto deployment with each passing day.

¹⁰³ *Id.* at p. 70.

¹⁰⁴ *Qwest Comments* at 35-36.

¹⁰⁵ *Cisco Comments* at p. 9.

commensurate with these services for those needing certainty and reliability in regard to the particular services.¹⁰⁶ For instance, customers are looking for voice service over DSL IP without gaps, and videoconferencing services without delays in transmission.

Cisco provides a very illustrative example of a CLEC using a “smart” DSLAM to manage bandwidth that allows for oversubscription of bandwidth as opposed to a CLEC that must rely on a DSLAM without QoS functionality that therefore, requires the CLEC to buy sufficient bandwidth to meet the maximum bandwidth demand at all times.¹⁰⁷ The latter scenario would require the purchase of additional DSLAM ports, additional installation, a second uplink, additional power, and additional DS-3 transport. Cisco determined that lack of access to QoS functionality would raise the CLEC’s costs by 31% in the example given. The latter scenario also places a greater burden on the ILEC, and its facilities, since it has to provide additional facilities including more power, more DS-3 lines, and more space to house extra DSLAM ports.¹⁰⁸

Thus, allowing CLECs access to QoS functionalities will allow customers to have access to a wider variety of services, will reduce CLEC costs, and will actually lessen the use of ILEC facilities.

¹⁰⁶ *Id.*

¹⁰⁷ If bandwidth can be effectively managed, a carrier can “oversubscribe” the bandwidth, *i.e.*, sell bandwidth in quantities larger than the maximum demand at any given moment. DSLAMs with QoS functionality do this by prioritizing certain services that are more bandwidth sensitive.

IV. COPPER LOOPS MUST BE MAINTAINED

ILEC declarations in this proceeding have heightened the importance of the issue of spare copper loops. As noted above, ILECs have maintained that there is no collocation space at most remote terminals, and that, even if there is space at such a terminal, it may not be technically feasible for ILECs to collocate at these facilities. Regardless of the validity of these assertions, it is becoming increasingly obvious that CLEC access to NGDLC loops will be fraught with disputes as to what access CLECs should receive. Thus, it is vital that CLECs know that they are able to access spare copper facilities to provide advanced services. Maintaining existing copper facilities in the subloop will give CLECs more options in providing such access.

As discussed in our initial comments, the lack of collocation space for CLEC DSLAMs in many NGDLC remote terminals, coupled with interoperability issues with line cards, could effectively preclude a CLEC even from accessing its customers, much less providing the services it seeks to offer to its customers. The ILECs and their vendors have trumpeted the continued availability of copper facilities as a solution.¹⁰⁹ In particular, Alcatel posits copper facilities as an alternative for those CLECs seeking to provide SDSL service.¹¹⁰ For copper to remain a viable alternative to the CLECs, the spare copper facilities need to be maintained.

¹⁰⁸ *Cisco Comments* at p. 11.

¹⁰⁹ CC Docket 98-141, Reply Comments of SBC Communications, Inc. In Support of a Determination that SBC Incumbent LECs May Own Combination Plug/Cards and Optical Concentration Devices at p. 15 (March 10, 2000) ("*SBC Reply Comments*").

¹¹⁰ *Alcatel Comments* at p. 20.

The disquieting thing about the position taken by some ILECs is that they couple their assurances that they will not retire copper on a massive scale with statements that they have an unfettered right to manage their own networks.¹¹¹ This suggests the tenuous nature of their assurances. SBC, in particular, has an expansive notion of its right to decommission facilities, and argues that the Commission approved the decommission policy it outlines in its Comments.¹¹² This is a mischaracterization of the Commission's *Project Pronto Order*. In that Order, the Commission gave no such sanction to SBC's decommissioning policy. Instead, it required SBC to adhere to certain commitments in regard to maintaining copper facilities. These commitments were designed to "ensure that competitors have access to the essential inputs needed to provide advanced services."¹¹³ So, far from giving sanction to any asserted right to retire facilities, the Commission mandated that SBC adhere to terms that would ensure these facilities are preserved.

SBC also argues that requiring it to maintain copper facilities would be akin to requiring access "to a yet unbuilt superior [network]"¹¹⁴ The argument is flawed, however. CLECs are seeking to preserve their access to the existing network and are seeking to ensure that their avenues of access to customers are not imperiled. Just as ILECs are not allowed to uncombine already combined network elements, ILECs should not be able to retire particular loop facilities

¹¹¹ SBC Comments at p. 74.

¹¹² SBC Comments at p. 73.

¹¹³ Project Pronto Order at ¶ 40.

¹¹⁴ SBC Comments at p. 74.

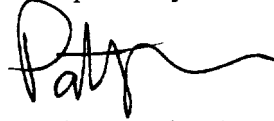
without a demonstration to a regulatory body that such an action is not being taken for anti-competitive reasons, or would not have anti-competitive effects. In reality, it appears that this is a classic squeeze play of monopolists against new competitors. ILECs are denying access to fiber, or heavily qualifying such access, while at the same time trying to pull out copper. Obviously, CLECs will not be able to meet the competitive goals of the Act if ILECs are able to thwart meaningful access to fiber while simultaneously removing copper.

As Mpower noted in its initial comments, SWBT in Richardson, Texas, without notice, rolled out a fiber-to-the-curb deployment that effectively precluded CLEC access to those customers. For CLECs, copper will remain an important part of their business plans, and they can ill afford for ILECs to retire parts of their copper plant without notice. For these reasons, it is vital that this Commission take the necessary steps to preserve these facilities.

V. CONCLUSION

For the foregoing reasons, the Commission should adopt the policies and requirements urged by Mpower.

Respectfully submitted,

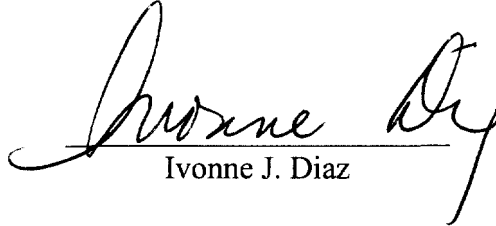


Helen E. Disenhaus
Patrick J. Donovan
Swidler Berlin Shereff Friedman, LLP
3000 K Street, N.W. - Suite 300
Washington, D.C. 20007
(202) 424-7500

Kent F. Heyman
Senior Vice President & General Counsel
Francis D. R. Coleman
Vice President, Regulatory Affairs
Richard E. Heatter
Vice President, Legal Affairs
Mpower Communications Corp.
175 Sully's Trail - Suite 300
Pittsford, NY 14534
(716) 218-6568 (tel)
(716) 218-0165 (fax)

CERTIFICATE OF SERVICE

I, Ivonne J. Diaz, hereby certify that on this 14th day of November 2000, copies of the foregoing Reply Comments of MPOWER COMMUNICATIONS CORP. were delivered by hand or first-class mail to the attached list of parties:


Ivonne J. Diaz

George N. Barclay, Esq.
Associate General Counsel
Personal Property Division
Personal Property Div - General Services
Administration
1800 F Street N.W. - Room 4002
Washington, D.C. 20405

Snively King Majors O'Connor & Lee, Inc.
1220 L Street, N.W. - Suite 410
Washington, D.C. 20005

Richard S. Whitt
Senior Policy Counsel
1801 Pennsylvania Avenue, N.W.
Washington, D.C. 20006

Leon M. Kestenbaum
Jay C. Keithley
H. Richard Johnke
1850 M Street N.W. - 11th Floor
Washington, D.C. 20036

Alfred G. Richter, Jr.
Roger K. Toppins
Michael J. Zpevak
Tracy A. Parks
SBC Communications Inc.
One Bell Plaza, Room 3021
Dallas, Texas 75202

Gail L. Polivy
GTE Service Corporation
1850 M Street, N.W.
Suite 1200
Washington, D.C. 20036

Brad E. Mutschelknaus
Jonathan E. Canis
Edward A. Yorkgitis, Jr.
Joan Griffin
Kelley Drye & Warren LLP
1200 19th Street, N.W.
Washington, D.C. 20036

Hope Thurrott
Lori A. Fink
Christopher M. Heimann
Roger Toppins
Paul K. Mancini
SBC Communications Inc.
1401 I Street, N.W., Suite 1100
Washington, D.C. 20005

M. Robert Sutherland
Stephen E. Earnest
Jonathan B. Banks
BellSouth Corporation
1155 Peachtree Street, N.E., Suite 1800
Atlanta, GA 30309

David R. Conn
McLeod USA Telecommunications Services, Inc.
6400 C Street, S.W.
Cedar Rapids, IA 52406-3177

Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Glenn B. Manishin
Christy C. Kunin
Lisa N. Anderson
Stephanie A. Joyce
Blumenfeld & Cohen
Technology Law Group
1625 Massachusetts Avenue, N.W. - Suite 300
Washington, D.C. 20036

Jeffrey Blumenfeld
General Counsel
Rythms NetConnections Inc.
6933 So. Revere Parkway
Englewood, Colorado 80112

Mark C. Rosenblum
Stephen C. Garavito
James J.R. Talbot
295 North Maple Avenue
Basking Ridge, New Jersey 07920

David W. Carpenter
Peter D. Keisler
David L. Lawson
James P. Young
1722 Eye Street, N.W.
Washington, D.C. 20006

Janice Myles
Common Carrier Bureau
Policy and Program Planning Division
Federal Communications Commission
445 12th Street, S.W. - Room 5-C327
Washington, D.C. 20554

International Transcription Service
1231 20th Street, N.W.
Washington, D.C. 20036

Thomas M. Koutsky
Jason Oxman
Covad Communications Company
3560 Bassett Street
Santa Clara, California 95054

Michael E. Olsen
William J. Bailey, III
Lori Anne Dolqueist
NorthPoint Communications, Inc.
303 2nd Street
San Francisco, CA 94107

Richard Metzger, Jr.
Ruth M. Milkman
Gil M. Strobel
Lawler, Metzger & Milkman, LLC
1909 K Street, NW - Suite 820
Washington, DC 20006

Howard Siegel
IP Communications Corporation
17300 Preston Road
Suite 300
Dallas, TX 75252

Lawrence G. Malone, Esq.
General Counsel
Public Service Commission of the State of New York
Three Empire State Plaza
Albany, NY 12223-1352

Lawrence W. Katz
1320 North Courthouse Road
Eighth Floor
Arlington, VA 22201

Russell C. Merberth, Esq.
Michael Carowitz, Esq.
Winstar Communications, Inc.
1615 L Street, N.W.
Suite 1260
Washington, DC 20036

S. Blake Ashby
IntraSpan Communications, Inc.
6609 Clemens, 1W
St. Louis, MO 63130

Carol Ann Bischoff, Esq.
Executive Vice President and General Counsel
Competitive Telecommunications Association
1900 M Street, N.W.
Suite 800
Washington, DC 20036

Robert J. Aamoth, Esq.
Joan M. Griffin, Esq.
Winafred R. Brantl, Esq.
Kelley Drye & Warren LLP
1200 - 19th Street, N.W.
Suite 500
Washington, DC 20036

Sylvia Lesse
John Kuykendall
Kraskin, Lesse & Crosson LLP
2120 L Street, N.W.
Suite 520
Washington, DC 20037

Donald H. Sussman
Director of Regulatory Affairs
Network Access Solutions Corporation
13650 Dulles Technology Drive
Herndon, VA 20171

Rodney L. Joyce, Esq.
J. Thomas Nolan, Esq.
Shook Hardy & Bacon LLP
600 - 14th Street, N.W.
Suite 800
Washington, DC 20005

Jon G. Lamb, Jr.
Nortel Networks Inc.
2100 Lakeside Boulevard
Richardson, TX 75081

Stephen L. Goodman, Esq.
William F. Maher, Jr.
Halprin, Temple, Goodman & Maher
555 - 12th Street, N.W.
Suite 950 North Tower
Washington, DC 20004

Brad E. Mutschelknaus, Esq.
Jonathan Canis, Esq.
Edward A. Yorkgitis, Jr.
Kelley Drye & Warren LLP
1200 - 19th Street, N.W.
5th Floor
Washington, DC 20036

Scott Blake Harris, Esq.
William M. Wiltshire, Esq.
Harris, Wiltshire & Grannis LLP
1200 - 18th Street, N.W.
Washington, DC 20036

Matthew A. Brill, Esq.
Wilmer, Cutler & Pickering
2445 M Street, N.W.
Washington, DC 20037-1420

Lawrence E. Sarjeant, Esq.
Linda L. Kent, Esq.
U.S. Telecom Association
1401 H Street, N.W.
Suite 600
Washington, DC 20005

Howard Siegel
Vice President of Regulatory Policy
IP Communications Corporation
17300 Preston Road
Suite 300
Dallas, TX 75252

Theodore M. Weitz, Esq.
Vice President and General Counsel
Tachion Networks, Inc.
185 Monmouth Park Highway
West Long Branch, NJ 07764

Michael J. Ettner
Senior Assistant General Counsel
Personal Property Div - General Services
Administration
1800 F Street N.W. - Room 4002
Washington, D.C. 20405